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## Original Articles.

### "ON ELECTROLYSIS."—RELIABLE TABULAR STATISTICS; WITH SOME REMARKS.

By ROBERT NEWMAN, M. D.,  
NEW YORK.

[Fellow Amer. Electro-Therapeut. Assoc. Formerly Prosecutor and Chief of Surgical Clinic L. I. C. Hospital; Consulting Surgeon to Hospitals in Hackensack, Bayonne, Home in Yonkers, West Side German Dispensary, etc., etc.]

THE TIMES AND REGISTER specials have proven a great success. The issue of January 21st, devoted to "*Electrolysis in Strictures*," contained very valuable articles, reporting many successful cases treated by electrolysis by different operators. In the main points all agree, and the writer is indebted to the medical press, for giving him credit for his method and instruments in the treatment of urethral strictures by electrolysis. This method has been practiced very extensively, more than is known generally, and it will be of interest to peruse some of the statistics gathered from published records, or from direct communications by the respective operators, as contained in the following table.

#### STATISTICS OF REPORTED CASES OF URETHRAL STRICTURES TREATED SUCCESSFULLY BY ELECTROLYSIS.

	Cases.
T. F. Frank, Pittsburg, N.Y. Medical Record, Feb. 2d, 1874, etc.; and verbal report, estimate, . . . . .	30
(Dr. Frank has treated many more cases, but not having a correct statement on hand a low estimate is given.)	

Carl Weiss, Buffalo, letter July 29, 1879 . . . . .	6
John Butler, Amer. Jour. of Electrology, October, 1879, N. Y. Journal Homœop., August, 1873; N. Y. Medical Times, November, 1882; text book Elect. Therap., 1879, . . . . .	
D. O. Farrand, Detroit, private letter, October 6 1882, . . . . .	18
J. H. Glass, Utica, N. Y., Medic. Record, May 12, 1883, (9) private letter, March 22, 1893, (231), . . . . .	240
W. H. Duckeman, Olean, N. Y., Med. Record, June 25, 1883, letter August 11, 1883, . . . . .	7
Robert Newman, N. Y., New Engl. Medic. Monthly, August, 1885; Jour. Amer. Med. Assoc. September 24, 1887; Trans. Amer. Elect. Therap. Assoc., 1892, . . . . .	300
A. F. Sampson, Galveston, Texas, letter Nov. 28, 1888, Texas State Med. Assoc., (low estimate), . . . . .	8
W. F. Hutchinson, Providence, September 28, 1882, N. E. Med. Monthly, December, 1886; TIMES AND REGISTER, January 21, 1893, . . . . .	39
G. W. Overall, Memphis, Missip. Vall. Medic. Mo. 1886 and 1887, vol. III, 1883, (9) letter (141), . . . . .	150
W. T. Belfield, Chicago, South. Clinic, July, 1886; Jour. Amer. Med. Assoc., April 24, 1886, . . . . .	37
Geo. H. Rohe, Baltimore, Maryland Med. Jour., November 20, 1886; letter of March 15th states that his statistics are not accessible at this time, . . . . .	
David Prince, Jacksonville, Ill., letter November 29, 1888; transact. Illinois State Medic. Soc. . . . .	
P. J. Hayes, Brit. Med. Journ., July 17, 1886, . . . . .	
F. F. Dickman, Fort Scott, Kas., Kansas City Med. Record, May, 1889, . . . . .	
Stevenson and Bruce Clarke, London Record, May 25, 1886; Brit. Med. Journ., June 23, 1887; Brit. Med. Journ., November 27, 1886, (estimate low), . . . . .	50
Bruce Clark, Brit. Med. Journ., Sept. 19, 1885.	
C. A. Bryce, Richmond, South. Clinic, July, 1886, letter March 11, 1893, . . . . .	50

L. Wolff, Philadelphia, N. Y. Medic. Press, Feb. 1887, . . . . .	3
Edw. Morton, London, Brit. Med. Journ., October 1, 1887, . . . . .	3
Edw. S. Smith, The Chironian, N. Y., April 12, 1887, verbal report, . . . . .	170
J. B. Green, Mishawaka, Ind., private communications and TIMES AND REGISTER, January 21, 1893, . . . . .	170
Chambers, Rennold & Rohe, Baltimore, Phila. Medic. Times, June 1, 1888, . . . . .	100
R. W. St. Clair, Brooklyn, letter April 10, 1888, in five years, . . . . .	7
G. W. D. Patterson, Atlanta, Ga., letter May 23, 1888, and March 15, 1893, . . . . .	5
E. N. Chestaine, Hume, Mo., letter May 28, 1888, . . . . .	4
J. J. Berry, Portsmouth, South. Med. Record, Sept. 13, 1888, letter March 14, 1893, . . . . .	24
Semeleder, Mexico, Wiener Klinik, October, 1888, . . . . .	30
Swinford Edwards, Med. Pres. and Circul., April 11, 1888, . . . . .	2
E. L. Stephens, Nashville, letter January 16, 1888, and verbal communication, (estimate), . . . . .	51
W. S. Tremain, Buffalo, Phil. Medic. Register, Jan. 12, 1889, and letter Feb. 5, 1889, no figure received, . . . . .	100
W. H. Walling, Phila., New Eng. Med. Monthly, July 15, 1889, and others, . . . . .	29
John Fearn, Jour. Electr. Therap., December, 1891, . . . . .	20
W. H. King, N. Y., private communication, March 14, 1893, 51 cases out of 64, . . . . .	11
F. S. Crossfield, Hartford, TIMES AND REGISTER, January 21, 1893, . . . . .	3
Foveau de Courneillis, Paris, Journ. Amer. Med. Assoc., February 27, 1892, . . . . .	25
Arthur S. Wolff, Brownsville, Texas, letter, February 3, 1893, . . . . .	5
W. C. Wile, Danbury, Conn., Journ. Elect. Therap., January, 1891, and letter March 11, 1893, . . . . .	6
S. Waterman, N. Y., letter, March 10, 1893, . . . . .	5
H. C. Bennett, Lima, Ohio, letter, March 11, 1893, . . . . .	210
F. H. Wallace, Boston, TIMES AND REGISTER, January 21, 1893, and letter, March 15, 1893, . . . . .	4
Wm. R. D. Blackwood, Philadelphia, letter, March 16, 1893, no figures stated, . . . . .	
Chas. G. Cannaday, Roanoke, Va., TIMES AND REGISTER, January 21, 1893, . . . . .	
O. S. Phelps, N. Y., TIMES AND REGISTER, January 21, 1893, . . . . .	
Chas. R. Dickson, Toronto, Ont., no report, . . . . .	
J. H. Kellogg, Battle Creek, letter, February 9, 1888, . . . . .	
R. J. Nunn, Savannah, TIMES AND REGISTER, January 21, 1893, . . . . .	
C. P. Thayer, Boston, letter, December 9, 1889, . . . . .	
Chas. Dake, Hot Springs, Ark., letter and verbal report, . . . . .	
A. T. Douglas, New London, letter, March 14, 1893, . . . . .	
A. R. Booth, Shreveport, La., letter, January 9, 1888, . . . . .	
W. F. Robinson, Albany, letter, March 14, 1893, . . . . .	
George C. Pitzer, St. Louis, Mo., letter, March 12, 1893, cases all recorded, . . . . .	
Robert Reyburn, Washington, D. C., letter, March 19, 1893, . . . . .	

These statistics contain 1755 cases, which have been compiled from records published in medical journals and from direct communications by the operators, whose letters as documentary evidence are in possession of the writer. The estimate is below the real number, and even when successes have been known, the number of cases has been omitted in these tables, where operators neglected to report and state their cases in figures. Having thus stated the facts connected with the statistics, and the tables so representing a very large number of successes, notwithstanding that the real number would be far larger than recorded, it must also be taken into consideration that many operators do not report their cases, which, therefore, are not known, nor accessible. Neither have all reported cases been included in these tables, and this compilation has been made only from resources accessible or known to me through correspondence. Nevertheless the number reported represents a very large one and, shows that this mode of treatment is practiced successfully by many practitioners all over the world, but mostly in the United States and England.

Some gentlemen have attempted to employ this treatment in a reckless manner, not, some of them, even being qualified or not having selected the proper instruments. It is a wonder that not more failures have been the result of such an evil. If an operator uses twenty-five milliamperes, and is successful, it is an accident, and not due to his care. According to circumstances, variations from rules may be employed, but such are exceptions, and can only be admitted as exceptions and indicated by unusual causes.

In the main, the author's rules, formerly enumerated, still hold good, of which the following are the most important: Expertness as a genito-urinary surgeon and electrician; the utmost patience and gentle manipulations; correct diagnosis; using a galvanic battery, the negative pole to stricture, good electrodes, weak currents of three to five milliamperes, long intervals, never operating during the stage of acute inflammation.

It is also well to bear in mind that electrolysis is *not* a cauterization, nor a burning process, neither a dilatation. On the

contrary, burning and pressure must be avoided. Electrolysis is merely an electro-chemical process, which acts as an absorbent, and to such qualities we owe our success in its employment in the treatment of strictures.

**ELECTRODES.**—Only a few words about these instruments. After an experience and steady practice of nearly a quarter century, the writer has no reason to change or improve his electrodes. The instrument must be firm, made in one piece, without any joints or screws, must have a certain stiffness in order to be guided with certainty to its course by the manipulator's hand. The bulb must be either egg or acorn shaped, so that the belly of the bulb touches equally the walls of the urethra constituting the stricture, thereby exercising the absorbent power of electricity equally all around the strictured part. Instruments conical at the end have a wrong construction, and such an end will stand so loose in the urethra that the electricity cannot exert its power, in which case a pressure equal to dilatation is necessary, that the egg-shaped bulb will exert the influence of the electricity enlarging the calibre of the urethra. Hence the right shape of the instrument, guided correctly by the operator, will enlarge the stricture by absorption and not by simple dilatation.

The tunneled, as also the combination electrodes devised by the writer, are valuable additions in certain bad cases, in which the pathological condition have altered the anatomical topography of the urethra. Their careful use makes false passages an impossibility and a thing of the past.

*The modus operandi* has been detailed in former articles, and again in *THE TIMES AND REGISTER* of January 21st, 1893, particularly vividly and clearly described by Dr. W. F. Hutchinson, on page 44.

To my friends who have kindly furnished statistics, I tender sincere thanks. Such a large number of reliable successes cannot be impaired by a few negatives. And what does the moon care, if some stray dog barks at his brilliancy during a lonely night?

Electrolysis has also been used with success in surgery, dermatology and gynecology, particularly in the following:

Aneurism, varicocele, hydrocele, nævi and port wine marks, erectile tumors, ganglions, epilation, ranula, hernia, hemorrhoids, goitre, tumors, obstruction of eustachian tube and deafness, pseudo-membranous laryngitis, malignant tumors, removal of the callus, opacity of the cornea, granular lids, lachrymal obstructions, bedsores, enlarged prostate, fistula, nasal ducts, strictures of the oesophagus, female urethra and rectum, warts, atresia of the uterine canal, chronic cervical catarrh, dysmenorrhœa, extra-uterine pregnancy, metritis, cellulitis and peritoneal adhesions, growths of the vulva, uterine fibroids, peri-uterine hæmatocele, subinvolution, hyperplasia and stenosis of the uterus, salpingitis, oophoritis. The field is too large, and the space allowed too small, to enter into details of cases or subjects mentioned above.

The writer has treated many cases not published, but has reported particularly some experience in carcinoma and stricture of the rectum. Those reports can now be confirmed. Cases of rectal stricture treated six years ago and reported as cured, are well to-day, without having suffered relapse; one of these had been diagnosed by surgeons of high repute as carcinoma of rectum. Some hopeless cases of carcinoma were treated, with the perfect understanding that only relief and allaying of pain could be expected, in order to prolong life. Nevertheless, those patients are still alive after two years, and are in a better state than before treatment. Treatises on these subjects with reference to electrolysis would fill a volume, and further reports must be postponed for other occasions.

NEW YORK, 68 West 36th Street.

## ELECTRICITY IN THE TREATMENT OF URETHRAL STRICTURES.

By G. HOWARD McFADDEN, M. D.,

[Former House Surgeon and now Visiting Physician to Hackensack Hospital.]

**S**INCE 1888, I have seen and assisted Dr. Robert Newman in his treatment of strictures of urethra and rectum, in the Hackensack Hospital, and a number of cases in private practice. I have made use of the instruction furnished by him with success. The advantages of electrolysis in the treatment of urethral stric-



tures are that the patient may pursue his usual occupation without any discomfort or annoyance, with the exception of the time in going and coming from his physician's office, and after electrolysis there is that sensation that something has been done; patient urinates more freely and without that spasmodic contraction and dribbling of urine. I have just recently treated a case of stricture, that had cut by a prominent genito-urinary specialist in New York City. I was sent for in the night; patient had a severe chill, and gave me the following history: Had an attack of gonorrhœa one year ago; it did not succumb to treatment, but constantly had a slight gleety discharge; was advised to consult this specialist, who examined him and said he had two strictures, and that they would have to be cut; the operation was then performed, there was a profuse hemorrhage, and patient was advised to go home and report the following day.

I was called in the same night after the chill; patient's temperature was  $103\frac{1}{2}^{\circ}$ , and complained of a fullness and pain over the region of bladder and in penis; could not urinate. I passed a No. 20 Fr. catheter with considerable pain, and drew off about a pint and a half of urine with a quantity of clotted blood, and gave an anodyne; and a mixture of potass. citrat., tr. hyoscyam., etc.; kept patient in bed. Next day he was somewhat easier, temp.  $101^{\circ}$ , and still complained of considerable pain in penis, which was very much swollen; had passed about seven ounces of urine slightly tinged with blood. I then prescribed benzoinol as a soothing injection. This case is now under treatment by electrolysis, and I merely mention it first to show how much better electrolysis is than cutting.

I will now report a few cases that I have kept under observation for some time, and examined and re-examined, thereby ascertaining that no relapse had taken place, if patients had been discharged as cured. The advantages of electrolysis may be had by referring to page 21 of Dr. Newman's "Twenty Years' Retrospect in the Treatment of Urethral-Strictures by Electrolysis."

The rules set down by the author in the same pamphlet must be strictly ob-

served if one wishes to be successful in the operation.

In these cases the diagnoses were correctly made and verified by the most trustworthy practitioners, who had sent the patients to the hospital. In some cases the patients had been under treatment by other methods which had not proved successful. It is a mistake to think that electrolysis was used so that it cauterized or burnt in any way. The rule must be observed, that only an absorption takes place without overstimulating the parts, weak currents, long intervals, never causing pain, careful handling of instruments without pressure or force. Pain, acute symptoms, etc., must be abated before electrolysis can be used.

Here are several cases with their histories:

CASE I.—F. S. B., age 23, single, February 13, 1888. Has discharged from the urethra for the past year after a urethritis which has not yielded to treatment. Has been under the care of an excellent well-known practitioner for stricture who sent him to the hospital for treatment by electrolysis. Patient very nervous and sensitive.

Examination. Bougie à boule meets with a thickening of the walls of the urethra and a stricture at five inches from the meatus. There was some discharge from the urethra for which an injection was ordered.

February 20. Urethra improved, scarcely any discharge, but it is evident that the injection has no influence on the stricture. Mitchell's bougies of thallin were ordered.

February 24. Urethra improved, electrolysis was used with a No. 21 Fr. acorn bulb straight electrode (Dr. Newman's acorn set vide, page, "Twenty Year's Retrospect") as a negative in the urethra and the positive sponge electrode in right hand. Three and one-half milli-amperes were used for five minutes, during which time the electrode passed its whole length of six inches and through the stricture.

February 29. Patient felt better, is easier and the urine flows in a larger stream. Bougies of thallin continued.

March 6. Electrolysis. No. 23, Fr. egg shaped, for seven minutes with a

current of three milliamperes, passed in bladder.

March 23. Electrolysis. No. 25 Fr. egg shape passed easily into bladder. No discharge.

April 3. Electrolysis. No. 27 Fr. egg shaped passed easily into bladder. Three milliamperes.

April 12. Electrolysis. No. 28 Fr. egg shaped, with a current of four milliamperes, passed easily into bladder.

May 1. Electrolysis. No. 28 Fr. egg shaped passed easily into the bladder with a current of three milliamperes. Patient discharged, cured.

Patient has been kept under observation for four years, has not had a relapse and on examination found that a steel sound, No. 28 French, passes easily into bladder without detecting any stricture.

CASE II.—May 26, 1888. A. Z. J., aged 24, single, patient has had an urethritis for nine months and is still discharging with frequent micturitions, passing blood and great pain. A sound has been introduced but once. Small stream has been noticed and a stricture found. Bougie á boule on examination meets inflammatory contractions all sub-acute which are sensitive to the touch. Strictures were found at three and five inches from meatus. Urethra was very sensitive and for this reason electrolysis was not used. Mild injections were ordered and potass citrat, etc., to render urine alkaline and later Mitchell's bougies of thallin.

June 18. Patient feels better, but there are still acute symptoms. Urethra is very sensitive and bleeds on the slightest touch of a sound or electrode, therefore electrolysis is contra-indicated.

April 8, 1889. Patient has not been seen since last June, discharges only a very little and no acute symptoms. Stricture is worse. At the hospital electrolysis was used with a No. 14 French egg shaped electrode which passed only to six inches.

April 15. Filiform guide was introduced and after some manipulations passed into bladder. Over this a No. 9 French tunneled electrode was passed with a current of four milliamperes, slowly through both strictures and was arrested at seven inches.

May 6. Electrolysis. No. 17 French

passed only to seven inches, and was there stopped.

May 25. Electrolysis. No. 17 French passed only to seven inches, three milliamperes.

June 22. Electrolysis. No. 20 French acorn bulb passed to seven inches from meatus with three and one-half milliamperes.

June 30. Electrolysis. No. 21 French acorn bulb passed its whole length six inches.

July 15. Electrolysis. Filiform guide No. 9 French combination and tunneled passed for the first time into the bladder, which was not attempted before on account of the severe spasm of the bladder. The small size No. 9 had been selected in order to pass the instrument into the bladder, which would have been impossible to do with a larger instrument.

July 22. Electrolysis. No. 20 French acorn bulb, passed its whole length, six and one-half inches.

August 20. Electrolysis. No. 21 French egg-shaped, passed easily into bladder with a current of four milliamperes.

September 2. Electrolysis. No. 23 French egg-shaped, passes slowly through stricture with a current of four milliamperes.

September 15. Electrolysis. No. 25 French egg shaped, passed easily into bladder with a current of four milliamperes.

September 22. Electrolysis. No. 26 French egg-shaped, passed into bladder with a current of four milliamperes. This was a very severe case in which, at times, scarcely a filiform guide would pass, and the treatment's progress was impeded by the patient's irregularity in having electrolysis used. Patient has been kept under observation and has been re-examined several times, and no relapse has taken place.

CASE III. IMPASSABLE STRICTURE.—B. C., aged thirty-seven, single. Has a very severe stricture; dates back seven years; very small stream, at times urine only flows after severe straining; hemorrhage from urethra; urine always scalding; cystitis causes severe painful spasm. The whole mucous lining of urethra is much congested, and granulations with erosions. No instrument will pass further than five and one-half inches where

the stricture is hard, almost cartilaginous, and not even a filiform guide will pass. There is a profuse hemorrhage from this place on the slightest touch with a bougie á boule, and even with a filiform guide. He has been treated by local applications, per endoscope, for the granulations and to allay the hemorrhage. During October, 1892, he had an attack of malaria to such a degree that he had to remain at home and in bed. The meanwhile the stricture was impassable and urine dribbled only under severe straining, and cystitis with spasms. Local applications by means of Mitchell's soluble gelatine bougies were used during November and December, 1892.

December 27. Filiform guide passed into bladder for the first time, over which a tunneled combination electrode No. 9 French, passed into the bladder. Urine was drawn off and bladder washed out with a solution of acid boracic.

January 4, 1893. Filiform guide in bladder over which a tunneled combination electrode No. 11 French egg shaped electrolysis four milliamperes, nine minutes passed slowly through the stricture into the bladder.

January 10. Electrolysis. No. 12 French combination electrode tunneled over a filiform guide with five milliamperes passed into bladder in five minutes.

January 16. Electrolysis. No. 14 French combination passed into bladder with four milliamperes in ten minutes.

January 23. Electrolysis. No. 17 French egg shaped passed slowly into the bladder with a current of four milliamperes for ten minutes.

January 30. Electrolysis. No. 20 French egg shaped passed into bladder five milliamperes, ten minutes.

February 8. Electrolysis. No. 21 French egg shaped four milliamperes, nine minutes passed into bladder.

February 15. Electrolysis. No. 23 French egg shaped passed into bladder five milliamperes, ten minutes.

February 24. Electrolysis. No. 24 French egg shaped passed into bladder five milliamperes, nine minutes. This case is still under observation and I may report it later on, but consider it the most severe case that electrolysis could have; as it was impassable and urethrotomy

seemed to be the only possible cure. But electrolysis accomplished it without any bad result, or any interference with the patient's usual occupation. I have assisted in several operations for stricture of the rectum and enlarged prostate, by means of electrolysis, with very favorable results.

286 MAIN ST., HACKENSACK, N. J.

## ELECTRO-RECTAL SURGERY.

By HOMER C. BENNETT, M. D.,

LIMA, OHIO.

I HAVE used negative galvanic electricity in the treatment of a number of cases of cervical stenosis, and urethral stricture, with very satisfactory results, but at present have no tabulated record of them prepared. I consider this method of treatment the one *par excellence*.

I desire to present the record and history of one case in particular, that I am now treating for rectal stricture, by means of electrolysis.

I append the patient's and family history as it may be of interest to some who are investigating the subjects of heredity and the intermarriage of relatives.

Patient's maternal grandfather and grandmother were first cousins, and had an idiotic daughter, now living, aged seventy.

Patient's maternal aunt also married her first cousin, and she has two scrofulous children.

Patient's paternal cousin died of consumption; patient's paternal cousin died of whiteswelling; patient's paternal cousin now has white swelling; patient's father died of dropsy, aged sixty-three years; patient's mother died of rectal trouble, aged forty-nine years; patient's brothers had no children; patient's sisters, two of them had twelve children, none of whom have had any diathetic disease. Patient is one of a family of nine children, two of whom died in infancy of some disease of childhood. One brother died in army, another brother had throat trouble for several years prior to his death five months after an attack of la grippe. Another brother has some heart disease.



Another brother, a physician, died last year, aged forty-three years. He had fistula and rectal trouble for three years before his death, which was due to lung and spinal trouble, six months after an attack of la grippe.

One sister living is well, and another sister living has had a cough and expectoration for years, as had also a maternal great aunt, now dead. Patient, Mrs. Belle W., blonde, aged forty-two, nullipara, married fourteen years, husband healthy. Had a vaginal discharge for two years, prior to her present rectal trouble, which began eight years ago. Was always constipated. Has used local applications of almost everything, injections, suppositories, and internal medicines.

Five years ago was treated with slow dilatation by bougies for five months. Three years ago had ten applications of electricity in three weeks, with about a four-eighth inch electrode negative in rectum. General health, aside from local trouble, is good. First came to me Dec. 5, 1892, and on examination I found uterus and vagina normal, save a recto-vaginal fistula, with vaginal opening just inside the fourchette. Fistula extends up and back, through upper part of perineal body, about an inch and a quarter, and opens below a rectal stricture an inch in width. Also, on left side, an ischio-rectal fistula opening below the rectal stricture internally, and externally just outside the sphincter, thence again running back, under the skin, for an inch and a half, and opening about the tip of the coccyx.

On left side also found two firm tumors size of finger tip, the remains of hemorrhoids that her M.D. brother had injected several years ago, and which I have since removed by electrolysis.

The rectal stricture was two and a half inches from the anus, pyramidal in shape, completely circling the gut, an inch in width at base, and a firm narrow top. Numerous ulcers, painful and discharging muco-pus and blood.

#### TREATMENT.

I apply the positive pole of the direct constant incandescent light current to the abdomen, by means of a Johnson spiral spring disc electrode, eight inches in

diameter, covered with absorbent cotton wet in hot water, and an insulated olive tip metal electrode in rectum. The figures given below are in eighths of an inch in diameter.

Dec. 5, 1892.	Passed tip in 5 min.	strength 15 ma.
" 8, " "	" 3 " "	15 "
" 12, " "	" 1 " "	15 "
" 15, " "	" 4 " "	15 "
" 19, " "	" 2 " "	25 "
Also negative electrolysis one hemorrhoid 8 "		
Dec. 22, " "	Passed tip in 1 min.	strength 15 "
Jan. 9, 1893, " "	" 25 " "	20 "
" 13, " "	" 10 " "	20 "
" 19, " "	" 4 " "	20 "
" 24, " "	" 2 " "	20 "
" 30, " "	" 1 " "	20 "
Also negative electrolysis other hemorrhoid 8 "		
Feb. 3, 1893.	Passed tip in 1 min.	strength 20 "
" 3, " "	" 18 " "	20 "
" 7, " "	" 11 " "	20 "
" 11, " "	" 9 " "	20 "
" 15, " "	" 2 " "	20 "
" 20, " "	" 1 " "	20 "
" 20, " "	" 13 " "	20 "
" 27, " "	" 5 " "	20 "
Mch. 3, " "	" 4 " "	20 "
" 7, " "	" 3 " "	20 "
" 11, " "	" 2 " "	20 "
" 16, " "	" 1 " "	20 "
" 16, " "	" 10 " "	20 "

This is as far as I have gone at present, but I shall continue using the 10-8 inch tip, and until it passes easily, and then discontinue, as that will be as large as the sphincter will accommodate, and will probably be large enough. I insert a cocaine compound suppository before each treatment, and exert steady constant pressure without force until the tip passes, then push it up as far as it will go, and use a current with interruptions of from one to sixteen to the second, from five milliamperes to twenty milliamperes strength, for five to ten minutes to stimulate the involuntary muscles of the bowel. Then stop the interruptions and again pass the stricture backwards with the original ampereage, and withdraw with current shut off entirely. I am injecting the fistulae with peroxide of hydrogen and iodine, and they are gradually closing up; and if that plan of treatment does not close them up entirely in time I will operate on them, although the patient is averse to any operation, after the stricture is removed.

I have been tedious in the details, but it is the little things that make success, and success is not a little thing.

8 BOONE BLOCK, 114 1/2 W. MARKET ST.

## ELECTROLYSIS.—POPULARLY PUT FOR THE GENERAL PRACTITIONER.

By J. MOUNT BLEYER, M. D.,

[Medical Editor Electrical Review, Visiting Laryngologist to German West-Side Dispensary, etc.]

MUCH has been written by our scientists and electro-therapeutists on electrolysis but they invariably failed to put it in such a form that the average practitioner, who also is willing to learn this important question, that I am prompted by this special, to avail myself of the opportunity and explain what really electrolysis means, without being scientific in my expressions, and still not deviating therefrom.

What do we mean by the term electrolysis? It is the decomposition of a chemical compound called the *electrolyte*, into its constituent parts by an electric current.

Let us follow up this closely. We observe that in the galvanic battery a chemical re-action takes place and the result is the production of an electric current. If conversely, we place in a decomposable liquid, two conducting bodies, and thus enable a current of electricity to pass through the liquid, we shall find that the result is a chemical decomposition. This decomposition by means of the electric current is called electrolysis; the liquid decomposed is known as an electrolyte, and the two conducting bodies are termed electrodes. In a galvanic cell, a definite amount of chemical action evolves a current, and transfers a certain quantity of electricity through the circuit: So conversely a definite quantity of electricity in passing through an electrolytic cell, will perform a definite amount of chemical work. An electrolytic cell is, therefore the converse of a voltaic cell.

The discovery of the decomposing effects of the electric current was made by accident and followed almost immediately after the invention of Volta's pile.

Nicholson and Anthony Carlisle constructed a pile on the plan of Volta's, using a silver half-crown piece, alternated with equal disks of copper and cloth, soaked in a weak solution of common salt. It so happened that a drop of water was used to make good the contact of the conducting wire with a plate to which the

electricity was to be transmitted. In noticing this, Carlisle observed a disengagement of gas from the water, and Nicholson recognized the "odor of hydrogen" coming from it. They at once took measures to determine the cause of this singular effect, and using the first materials at hand, filled a piece of glass tube with water, plugging both ends with cork and inserting through each cork a piece of brass wire. When the wires were put in communication with opposite ends of the pile, bubbles of gas were evolved from the point of the wire by which the current left the tube, and the end of the wire by which the current entered became tarnished. The gas evolved appeared on examination to be hydrogen, and the tarnish was found to proceed from the oxidation of the entrance or positive wire. In order to prevent this oxidation of the material of the wire itself, another apparatus was made, in which platinum wires were used. Then gas was evolved from both wires, and this ascending through the water, was collected separately in two tubes. The contents of the tubes being examined, hydrogen was found in one and oxygen in the other, the two gases being almost exactly in the proportions known to constitute water.

In this way the decomposing power of the electric current was established very shortly after the first knowledge of Volta's invention. Of course, experiments so remarkable attracted the attention of other investigators. We find Cruikshank decomposed a variety of compound substances, and found, that, as a consequence of decomposition, the acids and oxygen always collected around the positive wire, by which the current came in; and hydrogen, metals, and the alkalis, around the negative wire, by which the current went out. Meanwhile, Ritter, of Jena, had also independently discovered the electro-decomposition of water and saline compounds, etc. Humphrey Davy, in 1800, began his famous experiments, which stand, and will stand forever as the foundation of a great branch of electrical science. Reference regarding them must be looked for in physics. Faraday, in 1834, established certain laws of electro-chemistry. He found that the amount of chemical action in a cell is always proportional to the quantity of electricity



passing through it; and that the quantities of substances dissolved and set free by electrolysis are in definite proportions by weight, and these proportions are identical with the ordinary chemical equivalents of the substances. From the first Faradic we know that a current of a certain strength will always liberate just so much hydrogen, for example, from water, and will cause the solution of just so much zinc in the cell whence the current is derived.

It is hoped that electrolysis herein thus explained is made intelligible. Space does not admit of detail description, otherwise I should have been still more explicit.

NEW YORK CITY.

### ELECTROLYSIS.

By F. H. WALLACE, M. D.

BOSTON, MASS.

THE passage of the galvanic current through living tissues is capable of setting up remarkable changes in pathological growths, as well as in the normal tissue, and as a result we possess one of the most potent drugs in all the *materia medica*, if I may be allowed to call this unknown force a drug.

The two poles, positive and negative, are for practical purposes opposite in their effects, or where we wish to obtain resolute effects we use the negative, and if we wish hemostatic results we use the positive. For the removal of superfluous hair, moles, warts, worms, or excrescences on the skin, uterine fibroids, strictures of rectum, urethra or oesophagus, atrophies and numerous other conditions where a nutritional effect is desired, we use the negative pole.

For naevi, port-wine stains, dilatation of the capillaries on any part of the skin, the menorrhagic conditions from whatever cause, the hyperæmic condition of abscesses, and other conditions which will suggest themselves to the reader, if he will think of the positive pole as one of hemostatic quality, can be cured or alleviated by the use of the same.

The use of electrolysis in removing moles, hairs, etc., I find successful, and, with care, no scarring need be produced. We have as yet no needle for removal of hairs which will follow the sinuosity of

all hairs, so that none will return after removal; and it becomes a question of hitting, by the sense of touch, the hair-bulb, but where the hairs are straight, or nearly so, I find the irido-platinum needle to answer all that can be required of any instrument. For the removal of moles, any needle or instrument that will allow the concentration of current directly on the site of the growth will answer, and thus, as in strictures, I have found much better results from mild currents for a comparatively long sitting, than a short sitting with strong current, and those not too frequently repeated. In many of the heretofore discouraging gynecological cases, I find electricity the remedy par excellence; leucorrhœa and many cases of pelvic exudates, for which, in former times, we had to use iodine, packing with cotton, etc., to relieve. The most brilliant result reported by eminent specialists in the treatment of fibroids, is of itself alone a sufficient guarantee that electricity has come to take the place of the knife, in these heretofore discouraging cases; and to it we may look with confidence to restore our patients to that "sound and pristine health" from which, for some unexplainable reason, they had deviated.

### ELECTROLYSIS WITH LOW TENSION CURRENTS.

By ROBT. L. WATKINS, M. D.,

NEW YORK.

IN an article written by the author in 1890, it was declared that the reduction of tumors should be accomplished by a much lower tension current than is commonly used, and that in thus performing these operations there was less pain produced than with a high tension current, with the same results.

The above was found out by using low tension secondary batteries for this purpose, and not by first formulating the above declaration and working from that. In other words it was the result of practical experiments. In order to accomplish this electrolysis, one or two ordinary storage batteries are used and connected in series, thus obtaining four volts when the two are in use together.

Second, the wires should be large, about the size of ordinary telegraph wire in the form of flexible cords.

Third, the needle electrodes which are used should be about the diameter of knitting needles and should come to a sudden point. These are fastened to the electrodes in the most convenient way.

Enough electro-motive force to overcome the resistance of the part should be used and no more is necessary. Often one cell or two volts will do this. No milliamperemeter is needed at all, for I care not how few milliamperes are used, even though it is below one, as long as I get an electrolytic effect.

That a current is passing can be determined in two ways. First, by putting a telephone in the circuit, then by making and breaking, the circuit current will be heard. The patient also, at the same time, will experience a slight pain. Second, the current can be made and broken without the telephone, and if the pain is experienced, of course a current is passing. I have often used only one cell and obtained good results.

The reason why such large wires are used from the battery is not because a tremendous current is to be carried—yet it has a better chance to travel—but because it is found that better results are obtained with it. There seems to be a peculiar unmeasurable action produced by these large wires which is not obtained with the small.

The needle electrodes, two of which are generally used, are not necessarily to be insulated, though it produces less scar if the positive is so protected. Instead of two needle electrodes, it may be more convenient to have only one, the negative, which is placed in the growth, while the positive may be of metal, or a moistened sponge, placed in the mouth, or on some other mucous membrane.

A slow and painless way of introducing the needles is, to lightly apply them to the surface and gradually, as the electrolysis progresses, the negative needle will work into the growth, with a little pressure continually applied. Then by reversing the current so that the positive becomes the negative, this will then be worked into the tumor. Both the needles being in the tumor, the current can flow fifteen or twenty minutes as required.

Below are given two cases of fibrocystic goitre.

The first was Miss F. L., age 16, first

treatment in June 1891, application of two storage cells, the needles introduced just beneath the skin. The next treatment was August 10th, one storage battery was used for three quarters of an hour. August 31st, storage current of one cell; tumor nearly gone. November 14th, used two storage cells, one of which was made from a couple of lead pipes and worked well. The other was a Gibson; passed the current about twenty minutes. Three other applications were made on the same days as in case No. 2 making seven in all.

Case No. 2, a sister of No. 1. November 14th passed a current from two storage cells, one of which was a lead pipe cell; let it go half an hour. A congestion was noticed to extend all around the neck, starting from the poles, even as soon as the current started. January 4th, 1892, another current passed, and again about in March another current was passed.

In both these cases after this the patients failed to appear any more, but about two weeks ago I hunted them up, and found that the tumors had entirely disappeared in one case, and nearly in the other; leaving no appreciable scar and causing no pain. These cases were seen by Dr. Newman before and after they were reduced. Also by Dr. Patterson, who sent them to me.

I made a single application in another case a little over a year ago, a patient about 60 years old. The tumor was much larger than in either of the other cases cited and gave her a great deal of pain. The pain ceased and has not returned since. The tumor was considerably reduced in size and I have no doubt would have entirely disappeared if she had continued the treatment.



## ELECTROLYSIS IN STRICTURES.

By W. R. D. BLACKWOOD, M. D.,

PHILADELPHIA.

THE late issue devoted to this subject has evoked such a demand for more information as to call for this additional number, and I have been asked by the editor to contribute something. In the article written by myself in THE TIMES AND REGISTER of January 21st, I have told all that I know about the matter,

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consequently I now simply refer to a few questions asked me by correspondents since the date indicated.

*First.* I am asked, How about recurrence of stricture after electrolysis? Well, in my own cases there have been no relapses so far as I know. Patients may have had that happen and gone elsewhere, but I guess not many have done this. Relapse will happen under any method. Many of my cases were treated prior to coming to me by dilating, cutting, etc., and were pronounced cured by their surgeon. I think relapses are rare under electrolysis.

*Second.* I am asked if electricity has the power to select a given part of the body which is diseased and act on it alone whilst passing through healthy tissue, and to this I answer YES; and I am emphatic in saying so because this has been urged as a squelcher by laparotomists, who see nothing but the knife for every real or imaginary difficulty which drops into their clutches. Any man with half enough brains to practice his art knows that drugs have what may be called "selective powers," as, for example, digitalis, ergot, strophanthus, cactina, etc. In tumors the current may pass through perfectly healthy tissue both before and after touching the diseased mass, yet no harm is done, but the tumor is resolved. In endometritis the current passes through the diseased and healthy fundus alike—the inflammatory action is checked and the hypertrophy reduced, yet no harm comes to the normal womb. In varied paralyses galvanism traverses normal tissue doing its work actively—this is not harmed, but the muscle or nerve whose function is in abeyance is urged into activity, the final result being a cure of the disease. So in many other examples which can be named. Of course electricity can do harm to normal tissue if undue currents are employed. So will strychnine do harm when used medicinally if given in toxic doses. There is a maximum in everything not to be exceeded without doing injury, or causing fatality. Electricity will resuscitate a person apparently dead from respiratory failure, if used properly and in time; in a big enough dose it will stop the breathing of any living thing in the thousandth part of a second.

*Third.* I would not think of employing anything else than the current as a positive curative under any circumstances whatever. Where one bougie will go, any of that size must also pass, I therefore select that which, in addition to its dilating effect, will do the other thing—resolve by electrolysis the fibrous or cartilaginous band causing constriction.

*Fourth.* I have been asked about epilation under electricity. I have done little for a long time in this direction, because my sight is not as good as it was or ought to be now; the procedure is legitimate, and it does better than depilatories, but it is rather painful to the patient, and very slow if much is to be done. If the growth is not too noticeable on a lady I urge her to let it alone, and if she wont, I send her to a friend who wants to do such work.

*Fifth.* I don't like currents from street mains, because they are not as readily controlled as those from a battery. If one is anxious for heavy currents for manifold purposes, the secondary (or storage) battery is available, and it is less expensive in the long run, if fed by a Calland primary.

*Sixth.* If I was commencing practice now, instead of getting toward the other end of my working time, I would use electricity more frequently than I have done in the past, for its usefulness is only being born, so to speak; it will, before long, be used just as freely by all physicians as quinine is now, in its legitimate space; this space is far too circumscribed as yet. I have had most brilliant results in many cases where writers described its use, as, for instance, in brain lesions. Within twenty-four hours past I have seen a gentleman pronounced incurable by several neurologists from brain tumor, and this where operative measures, surgically speaking, were not to be thought of, yet he is now well and in full business activity. Galvanism cured him.

246 NORTH TWENTIETH STREET.

## ELECTROLYSIS IN STRICTURE.

BY C. A. BRYCE, M. D.,  
RICHMOND, VA.

FOR the last twelve or fourteen years we have devoted much time and attention to both the theory and practice of electrolysis, and in answer to the request of

the accomplished editor of the *TIMES AND REGISTER*, to give him our experience in this work, we can say that quite a short article will suffice to state our opinions on the efficacy of this method.

In properly selected cases, and with the requisite amount of skill and patience on the part of both the patient and operator, electrolysis will as certainly cure urethral stricture as water will put out fire. This is one side of the proposition. In certain other forms of stricture, and in the hands of the hasty and inexperienced practitioner, this method is not only useless but positively harmful. Some of the most brilliant results that we have ever experienced in urethral work have been through the agency of electrolysis. We recall cases of stricture that had existed for many years, that have been cured by electrolysis in our hands, and now, as many as eight, ten and twelve years have elapsed, without a single symptom of any trouble in this direction.

With this favorable result in our hands it may be wondered at by the reader, when we state that, at this time, we seldom ever think of making use of this safe, certain and painless method of treating stricture of the urethra. Our reasons for not using electricity in this form will explain, to some extent, why so many excellent surgeons do not practice the method and actually deny its efficacy.

To be successful with electrolysis in urethral stricture, as in all other classes of stricture or morbid growths or deposits, one must be thoroughly familiar with the pathological conditions present, and at the same time must understand fully the principles involved in the action of the galvanic current in absorbing morbid tissue. We must carefully avoid exciting inflammation, and should ever bear in mind that we are endeavoring to help nature to perform a purely physiological process. Should we overstep the bounds but a trifle, we will defeat our object and turn a most potent remedy into a cause of harm.

The average practitioner seems to think that the stricture must be *burned out* by the current, while the object of the operator should be to simply cause such decomposition from time to time as will gradually reduce the deposit at the time of using the current and start the ab-

sorbents to work, so that between the applications of the current much will have been done independently of the current. Or in other words, the current properly used accomplishes much in the way of absorption *at the time*, and much more work is done by the absorbents by reason of the stimulation of the galvanic application.

The process is very slow and tedious, and many physicians grow weary of the case before they have made any appreciable progress, and in endeavoring to hurry up matters increase current strength and frequency of applications, and thus insure defeat by bringing on sub-acute inflammation. Even where the physician has the patience necessary, it will be found that the patient will often grow discouraged, and quit the doctor before the method has had a fair chance.

In summing up the possibilities and advantages as well as the disadvantages of electrolysis, we are led to the following conclusions:

1st. In strictures consisting of simple hyperplastic deposits of all degrees, excepting those of dense cicatricial tissue, electrolysis carefully and scientifically used will effect a perfect and permanent cure. But in the treatment of even these selected cases, a very long period of time will be required, the operator must be a thorough master of the science of electricity and, withal, a good physician, and the patient must have a great amount of faith and patience, and considerable money, to make the surgeon consume the necessary time to treat him to a successful termination.

2nd. All of the objections above mentioned being met, it is the best method that can be found for strictures of the above class.

3rd. In strictures of fibrous bands and dense cicatricial tissue it is certainly worthless, and division or divulsion offers a far speedier and more certain method of relief.

506 N. SECOND STREET..

## ELECTROLYSIS IN TWO TYPICAL CASES OF FIBROMA.

By HOLFORD WALKER, M. D.

CASE, No. 1.—Mrs. J. P., age 29. Married nine years, no children. More or less menorrhagia ever since



marriage: unwell every two weeks last three years, period lasting six days, and very profuse; constant severe pain, totally disabling her for her household duties for past two years. Attended by various medical men in the city. Surgical interference advised, but dreaded. Sent to me by Dr. Mavety, and came into my hospital, March 1892. Found uterine myoma size of infant's head, involving the fundus. Remained two months, and continued to come as an externe for the following five weeks. Received applications of from 150, to 225 milliamperes three times weekly. Menstruation became normal and regular; pain completely ceased at end of second week. Tumor steadily reduced in size, patient steadily increasing in weight and improving in health. Reported herself at my office three weeks ago, in the picture of health; had done all her own household work since cessation of treatment: and was pleased to inform me that she was five months advanced in pregnancy, bearing in mind that she had been nine years married, without conception. Weight increased from 103 pounds before treatment, to 135 when she reported.

CASE NO. 2.—N. P., aged twenty-two years, single. Came to my hospital July 1892; her attending physician, Dr. Strange, being confined to his house. The patient suffered from severe and persistent menorrhagia during the previous three or four months, which nothing that was done availed to stop, the discharge would moderate with absolute rest and treatment, but the slightest exertion produced profuse hemorrhage.

Dr. Cameron saw the case with me, we diagnosed uterine myoma, and enlarged tube; and agreed it would be well to try electricity before resorting to surgical interference; as all other means had failed.

Patient received three applications weekly of from fifty to one hundred milliamperes. Menorrhagia ceased entirely after the second application. The regular menstrual period did not recur for three weeks, and only lasted three days. Improvement generally was rapid and marked; remained in the hospital nine weeks; and as an externe for milder current for three weeks, at

the end of which time was restored to health: and as a pleasant finale, was married in October last. I have a letter from her reporting, dated February 24, 1893, only complaining of a little indigestion, and stating that when she came to the hospital she weighed only 105 pounds, when she left, 120, and now 133 pounds.

The indigestion can be accounted for when I mention that she has gone to reside under the Stars and Stripes, the land proverbial for PIE.

TORONTO.

## Book Notices.

PLAIN TALKS ON ELECTRICITY AND BATTERIES. By Horatio R. Bigelow, M. D. Second edition, revised. 16mo. pp. 85. Philadelphia, P. Blakiston, Son & Co., 1892.

A small, but excellent book, giving good and reliable ideas concerning the mechanism of the prominent batteries. Beyond illustrating the motor-points to a moderate degree and showing Apostoli's method of uterine faradisation, nothing is said as to electro-therapeutics.

HUMAN ANATOMY. A complete systematic treatise by various authors, including a special section on surgical and topographical anatomy. Edited by Henry Morris, M. A., and M. B. Loud. Illustrated by 791 wood cuts, 214 of which are printed in colors from drawings made expressly for this work by special artists. Philadelphia. P. Blakiston, Son & Co., 1012 Walnut St. 1893. Cloth, 4to, pp. 1286. Price, \$7.50. A new text book for students.

The work is divided into ten sections, each prepared by an author who has devoted special attention to his section. In the illustrations the colors are utilized to aid the student in fixing salient points; for instance, the origins of muscles are shown by red lines, the insertions by blue, and the ligamentous attachments by black. The same colors are employed in the numerous plates illustrating the vessels. The engravings are very finely executed, the descriptions are concise, rather those of a dissector's manual than of a systematic treatise. Altogether the work is excellently suited to its purpose, and in the superiority over its predecessors marks the great progress in book-making of the last decade. It is surely notable that a work of this magnitude, so profusely illustrated, can be offered at so small a price.

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PHILADELPHIA, APRIL 8, 1893.

## ELECTROLYSIS IN STRICTURES.

SO much interest was manifested in our previous "Electrolysis" issue that we requested Dr. Newman to prepare the material for another on the same subject. The material has proved unexpectedly rich and abundant; so that we feel amply justified in the selection of this topic. The statistics accumulated by Dr. Newman, were all reported, would cover a list of over 2000 cases of urethral stricture treated by the electrolytic method. In the face of such a mass of positive evidence, one is tempted to explain the dissent existing by the application of the "personal equation." Still, everyone has his right of opinion and free expression; and if the opponents of this method desire it, the columns of the TIMES AND REGISTER are equally at their service.

As the man who has originated and popularized electrolysis in the treatment of stricture, Dr. Newman has won an abiding place in the annals of American medicine. In spite of the bitterest opposition, he has tenaciously held to his belief and has succeeded in impressing it upon others, as may be seen in the pres-

ent testimony. Dr. Newman is a native of Germany, whence he was exiled in his early youth, for his part in the revolution of 1848. He came to America with neither friends nor money, and was compelled to earn the means of completing his medical education.

He graduated at the Long Island College Hospital in 1863, and at Bellevue in 1869. In 1863 he went to the front as State's Volunteer Surgeon. In the same year he was appointed physician to the Northern Dispensary.

In 1864 he was appointed by Professor Hutchison, Prosecutor and Assistant of the Surgical Clinic in the Long Island College Hospital; also physician to the North-Eastern Dispensary, and a Sanitary Inspector in the Council of Hygiene and Public Health.

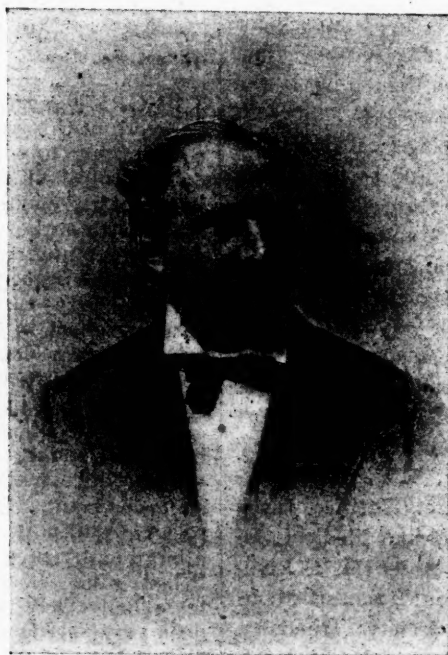
During 1865, he was appointed District Physician to the New York Lying-in Asylum.

When the Metropolitan Board of Health was organized in 1866 he was appointed a Sanitary Inspector. While inspecting an old house in Nassau street, he fell through a trap door, and was injured to such a degree, that he was laid up for six months, and then went to Europe to restore his health.

During the same year he operated successfully in Ovariectomy, and was the *first* who removed the tumor with the galvanic caustic battery.

In 1867 Dr. Newman was one of the founders of the Medico-Legal Society and its first Vice President.

The New York Medical State Society appointed him a committee to investigate the result of consanguineous marriages. For two years he corresponded largely with medical men all over the world in order to complete his investigations, and made an elaborate report to the Society at the meeting in 1869. Soon after, he was one of the founders of the Forensic Society, which had only a short life.



DR. ROBERT NEWMAN.



In 1875, he received the appointment of Surgeon of the North-Western Dispensary, which position he has held fourteen years, and performed many operations. Since 1879 he has been Corresponding Secretary of the Alumni Association of Bellevue Hospital Medical College.

Since the organization of the Alumni Association of Long Island College Hospital in 1880, Dr. Newman has been in the Board of Managers and successively its Vice-President, and lastly President.

While the doctor has a preference for surgery, he has made electrolysis his special study, in which branch he is the acknowledged authority.

His contributions to medical literature have been extensive, and by no means confined to electrical topics. The current number of *The Sanitarian* contains a paper of his upon cremation, the importance of which at the present time is manifest.

The doctor is also a member of the Physicians' Mutual Aid Association; Society for the Relief of Widows and Orphans of Medical Men; N. Y. County Medical Association; N. Y. State Medical Association; Society Medical Jurisprudence; N. Y. German Medical Society; Fellow of the American Electro-Therapeutic Association; Honorary Member Berlin Cremation Society; Honorary Member Danbury (Conn.) Medical Society; and he has been appointed Consulting Surgeon, Hackensack Hospital; Consulting Surgeon, Bayonne Hospital; Consulting Physician, Home for Aged and Infirm, Yonkers; Consulting Surgeon, German Dispensary, West Side.

He has contributed to medical literature about fifty articles, and has delivered clinical lectures in Philadelphia.

He has also written a part of the "International System of Electricity," now in press, to be published by F. A. Davis.

## Letters to the Editor.

I BELIEVE that it is electrolytic action of the continuous current, that gives us the beneficial results we oftentimes experience in the treatment of nerve lesions, both central and peripheral. Yet the direct action of the current is not so obvious as it is in surgical work. I can readily demonstrate that electrolytic action does go on in the deep seated tissues from surface application of electrodes, though perhaps not to the same degree in the same length of time, owing to the lack of density of the current.

W. J. HERDMAN, M. D.

ANN ARBOR, MICH.

I REGRET exceedingly that pressure of work at this season prevents me from contributing to your interesting number on electrolysis in stricture. Although I have not had enough experience with it to speak with authority, I have tried it in a sufficient number of cases to convince me that the negative pole of the galvanic current has a very decided dilating or relaxing effect in this class of cases. I have at least a dozen times, in the male, been able to introduce, through a tight resilient stricture, by the aid of the negative galvanic current, an olive-shaped metallic bougie a size larger than I had been able to introduce without electricity. In stenosis of the internal os uteri, causing severe dysmenorrhœa, I have had quite a large experience. I have already published nine cases, and since that I have had twelve more. The result has been very satisfactory, it having failed to cure in only one case, in which there was tubal disease, and a relapse having occurred in two others after exposure. So that the majority of the cases have been completely cured. I have, therefore, no hesitation in saying that negative intra uterine galvanism is one of the best remedies we possess for stricture of the uterus.

A. LAPHORN SMITH, B.A., M.D.

MONTREAL, CAN.

I AM still using electricity in the treatment of strictures of the urethra, but now usually confine the treatment to strictures in the bulbous, membranous or prostatic portion. Strictures in the penile

portion, especially resilient strictures, and also cases which are subject to so-called urethral fever, I prefer to cut.

I also use electricity in endo-cervical metritis, provided there are no pus tubes or other inflammatory troubles in the pelvis. I have, also, had some fine results in the use of the positive pole in the uterus, in cases of hemorrhage attended with myomas or fibroids.

In cases of hysterical ovaries, it frequently acts like a charm.

S. M. HOGAN, M. D.

UNION SPRINGS, ALA.

### ELECTROLYSIS IN STRICTURE.

**I**n response to your courteous and repeated invitation, I will occupy the time of your readers with some unusual experiences with electricity in the treatment of urethral and anal stricture.

I believe them to be unusual, because I have so far not seen or heard reports similar to these, and for the additional reason that the procedures to be detailed are, for the most part, at variance with the teachings of those whom we willingly honor as authorities on electric methods. Perhaps I ought to say that for my success I am much indebted to Dr. Robert Newman, of New York City.

Doubtless some of your correspondents will, as it is well to do, discuss theoretic details; and I will content myself with facts, which I trust may be valuable to some one.

In November, 1886, a gentleman came to me for whom repeated and excessive dilatation had been practiced. Contraction followed until micturition was distressing and his health much impaired.

By ordinary usage I could not introduce a filiform guide; and after much patient effort, I adopted the following, which suggested itself as a solution of my difficulty. Taking a hollow, flexible and tapering bougie, I removed so much of the point as would open the cavity only enough to permit the passage of a filiform guide, and tying the ends of two of these guides together, I passed them down inside the bougie until the distal end was barely concealed within the bougie's point.

I now anesthetized my patient, because of his extreme irritability, and introducing the bougie I tried to engage its point

in the stricture. Satisfied with my effort, I pressed the filiform forward and entered the bladder.

Next I withdrew the bougie over the filiform, cutting it off in sections as I withdrew it, so I could be sure of maintaining my guide in the bladder. Lastly I passed a tunneled electrode down over my guide, and my toil was rewarded by electrolytic success. I began with No. 12 French, and four additional seances at intervals of one to two weeks made the cure complete, as it remains to this date.

I used seven to twelve bi-chromate cells, of about one and one-half volts each, but I do not know how many milliamperes, as then I had no means of measuring.

II. On July 18, 1884, a patient who had been under the care of physicians in a neighboring town, was directed to my preceptor after they could no longer relieve the bladder. Let it be said of the latter physician, that while he is an excellent surgeon, he knows little of electricity, nor does he care to. He only asks for sufficient current to carry his instruments through an obstruction.

I will say, also, that he demands very much greater energy than I was taught to apply, or dared to use, until I observed the following cases in my office.

The patient, in his distress, himself used force in trying to pass a catheter and pushed the instrument directly into the rectum. He was thoroughly anesthetized, and introducing a No. 14 French electrode bougie, the current from thirteen to sixteen bi-chromate cells was gradually increased to full intensity. Dr. Hill directed the electrode, while his left index finger in the rectum served to prevent the instrument from passing through the urethral wound into the bowel. Although no sound could be passed, we found less difficulty than we anticipated with the electrode.

After the No. 14 had penetrated the stricture, it was exchanged for No. 17, followed by careful increase of current. Abundant evidence of decomposition was manifest during the operation.

So soon as the chloroform effect had sufficiently subsided the patient went out on the street. He passed, unaided, a good stream of water about an hour after the operation.

No blood was lost in the operation except that a few small clots escaped with gas from the rectum.

The only complication learned of was, that a few days after returning home to a neighboring village, he had an orchitis; which was treated by the local physician, and the man remains well to this date. The rectal wound also healed promptly.

III. In the autumn of 1891, a man was standing upon a mowing machine in his barn, and reaching above him for some article hanging there, fell astride of the seat-bar of the machine. Severe inflammation followed, which fairly subsided, but after some months almost complete stricture resulted from this injury. The urine could only be voided by drops. Absolutely *no* stream at *any* time. In the perineal space could be felt an induration about three fourths of an inch long and its diameter included the urethra. This man also came to my preceptor, Dr. Hill, expecting only the knife, but instead was brought to my office. After a ten per cent. solution of cocaine had been applied to the sensitive urethra, a No. 16 F. was introduced, and a current from forty McIntosh-Laclede cells was used, by rheostat, the milliammeter registering as high as 25 mm. This current could not be maintained long enough for our purpose, and we resorted to the bi-chromate, after freshly filling the cells above the customary charging line, so that there would be about two volts per cell. At the highest fifteen of these cells were used, and although considerable pain and hemorrhage accompanied the work, a free entry to the bladder was made. A severe chill and fever followed next day, but as he had been having slight chills, we were in doubt whether the severer manifestations were more than exaggerations of a previous condition.

The satisfactory features are that the stricture and induration disappeared and he made a good recovery with one seance. I should not omit to say that after the No. 16 had passed, No. 20 was substituted. I saw the patient the fifth of this month—March, '93—and he says he is well.

IV. Traumatic Stricture: Almost a duplicate of No. 3, except produced by falling in a hasty attempt to cross a fence.

Treatment given March, 1884. Result: A permanent cure by one treatment as in the former cases.

While my practice has been, and is, to use the milder currents, what I have here stated shows what may safely be done if heroic treatment is demanded.

V. A lady, aged about forty. She had been treated for hemorrhoids by the hypodermic method. The statement was that a large ulcer formed in the site of one of the tumors, and extensive induration supervened—so extensive as to involve the entire circumference of the bowel and constrict it. On October 19th, 1887, she was brought to me, after having consulted several who were greatly my superiors in years, and in knowledge also. The diagnosis was cancer.

I felt compelled to dissent from this, though for reasons just stated, I did so with some hesitation.

Only fluid stools could be voided, and the largest diameter which could pass the stricture was five-sixteenths inch. I had a set of olive electrodes made, grading from one-half inch to one inch in diameter.

Under anesthesia I succeeded in passing a one-half inch olive.

Three days later I passed, with cocaine anesthesia, an olive of 9-16 inch diameter, then, resting a week waiting developments, I found encouragement to proceed. One or two sances per week, as I could be permitted, were given until in all she received twenty treatments, and an electrode one inch in diameter would pass without electric aid.

Ten to fifteen mm. was the usual strength of current. It was noticeable during treatment that, in conjunction with reduction of the stricture, the surrounding induration was disappearing; the tissues putting on a healthy hue and defecation closely approximating the normal act.

Though more than five years have passed she is still in health, with no return of the anal affection.

S. T. ANDERSON, M. D.

I GLADLY give the results of my experience with electrolysis, so far as relates to the treatment of organic stricture of the male urethra. I have treated some twelve or fifteen cases. In



all, where I had complete control of the patient, I discharged him cured in from one month to eight months. In one case I could not introduce the whalebone filiform bougie, and complicated by abscess posterior to stricture, three and one-half inches from meatus, with fistulous opening, permitting urine to pass. Pus was passing through the meatus and false passage. This case lingered eight months on hand, owing to the inflammation extending to the urethra anterior to stricture, and great care and long intervals between the uses of the electrolytic current were necessary to avoid undue irritation.

I have used the current in primary or initial treatment as long as twenty-eight and one-half minutes before passing a stricture of about one and one-half inches in length; the subsequent treatments being of short duration, not over two minutes on an average for one stricture.

Some cases have left relieved before I discharged; these have generally been cases where the final fee has remained unpaid, and I have lost sight of the subjects.

I have removed moles from my own face and body, and from ladies' faces, principally of patients well known to me, leaving no scar after the lapse of a few months.

I also removed two soft corns from the feet of my wife, using a current of ten cells of a battery (Galvano-Faradic Co.) until the corn was perfectly white. These turned black in forty-eight hours, and in the course of a week a dry, hard plug dropped out, which healed up (the cavity) perfectly smooth.

I treated a benign tumor on the outer canthus of a young gentleman's eye. It was growing rapidly when I took the case in charge. It had been about six months since first noticed. Physicians had informed him that either the knife or an escharotic would be necessary. This I removed with four applications of current about one week apart; healed perfectly, leaving no scar. Of course it is understood that I used the needle or other operative electrode with the negative current, and followed other necessary details as to strength of current, length of application, and frequency, as my judgment directed.

Having removed here from Atlanta nearly three years ago, I have not had any additional cases, nor used the new

current controllers nor rheostats and other improved methods for controlling and regulating strength and intensity of high currents.

I would state that I am an eclectic physician, and trust the day will come when all schools will find it absolutely necessary to have a chair of electrical therapeutics, and students be required to pass examination in the same. I find the current invaluable in my practice, and believe it supplies and fills a long-felt want in the treatment of many diseases.

G. W. D. PATTERSON, M. D.

DEMOREST, GA.

IN answer to circular received, asking for my experience in treating stricture of the male urethra by electrolysis, I would say that my experience has been quite extensive. I have treated many cases and in presence of prominent physicians in different cities. Up to the present time, I have never failed in passing a No. II French electrode into the bladder, and with very few exceptions at the first treatment. I have had a few cases where it required several treatments before the sound passed in the bladder. During these treatments the patient felt better and was able to attend to his regular business without discomfort. The strength of current that I use is from five to eight milliamperes. The treatments varied in length from three to fifteen minutes. All these cases had been diagnosticated and treated before by other methods, which had failed.

There are two reasons why Newman's method is not more generally used. First, physicians who have never had any experience in treating stricture, have supposed that all that was necessary was to purchase a battery and the necessary sounds, and the electricity would do the rest; which can be compared with a man not having had proper experience, purchasing a fine outfit of surgical instruments and expecting them to do the work, without any experience or brains behind them. It requires, as you well know, the most delicate manipulation in treating stricture, and the surgeon cannot be too careful, nor too gentle. I consider that there is no surgical operation where so much care and good judgment is required as in treating these cases.

The second reason for failure is:

Physicians who are really good genito-urinary specialists, and thoroughly understand the anatomy of the parts and the manipulation of sounds as practised formerly, use by habit the knife or forcible dilatation. Having become used to that form of treatment, it is very hard for them to adopt the gentle pressure necessary in electrolysis for stricture. All the pressure required is to hold the electrode against the stricture, the current does the rest. The temptation of a good surgeon to pass sounds after having passed the electrode to dilate as much as possible, is the cause of his failure; that together with the force used. These two causes, I consider, have kept back electrolysis as a cure for stricture, when it should have the front rank in all cases.

All known plans for stricture, until Dr. Newman's method was discovered, have been very unsatisfactory. I know that all surgeons agree with me in this statement. This being the case, why not carefully follow out Newman's method as laid down by him, and give it a good, thorough trial? By so doing you will cure your patients and earn their everlasting gratitude.

H. E. WAITE, M. D.

IN answer to your favor of February 21,

I beg to state that I am very sorry that I cannot comply with your wishes. Since three days, I am sick with an attack of laryngitis and bronchitis, which seems to be epidemic here, and which will make it impossible for me to prepare the desired statements until the required date. I regret this so much more because I have operated on a stricture with electrolysis only a week ago. The affection was of late origin, the first symptoms and preceding gonorrhœa being observed only six to eight months ago. But my experiences with Prof. Newman's method of treating urethral strictures (they are confined to urethral affections only), induce me to recommend the same as a valuable addition to the different operations for this so troublesome affection. No anæsthetics are needed, and every physician who has the needed practice and experience in urethral surgery can perform it. The treatment deprives the patient only for a short time, twenty-four to forty-eight hours, of

following his occupation, and the result is uniformly good and *lasting*.

DR. HENRY KOCH.

THE tabulation of cases of stricture of the male urethra treated by electrolysis was long since abandoned by me, as my results have been so uniformly constant and good, that I have not felt the need of this kind of evidence. Going over my records and picking out these cases would necessitate a great amount of labor. Therefore I will carefully estimate the number as 240, these in a general surgical practice, without a single complication that might not follow the most gentle handling of the urethra. I prefer this method as being less painful, and procuring greater permanency of result, than either of the other methods.

J. W. GLASS, M. D.

UTICA, N. Y.

Dr. W. C. Wile, Danbury, Conn., writes February 28, 1893, that he has treated twenty cases of urethral stricture successfully by electrolysis.

Dr. Arthur S. Wolff, State Quarantine Officer, Brownsville, Texas, writes:—"February 3, 1893, About the number of urethral strictures treated by electrolysis, I find from my record forty-seven cases, of which twenty-nine were cured, nine improved, but discontinued treatment, six did not return after second visit, three failed. I have no time to give any further particulars. Electrolysis for stricture of the urethra twenty-five years ago was a terra incognita, but has risen up to be a flourishing colony, the ground of which has been surveyed and cultivated with success, by numerous emigrants from the general medical world, who applied themselves to the investigation of the therapeutical value of electrolysis in strictures. Many pernicious prejudices have been removed, errors corrected and bitter controversies settled. Darkness has given way to light.

There are now in America, England, France, Germany and all over the world, laborers in the field. I need not give the names of the men, even if I knew. Ask them if they do not meet daily with some painful proof that the influence they had hoped to exercise upon their professional colleagues, by the valuable sug-

gestions and record of cases successfully treated by electrolysis, is not far behind their most moderate expectation. And why is it so? I am afraid it is found in the deficiency of the bulk of the profession, in the practical knowledge of its application, and appreciation of the therapeutical value of electrolysis.

Certainly there are not a few who have by degrees supplied their deficiencies, but they have succeeded by a tedious process, through years of attentive inquiry and experience, or possessing more than the average natural qualifications for the task, of which last Robert Newman is a fair specimen.

Among the many branches of medical science, which of late has undergone the most important improvements, stricture of the urethra by electrolysis has assumed a most prominent position.

We find in the stricture of urethra one of the most arduous, and in my humble opinion the most difficult, branches of surgery. I deem it superfluous to dwell on the reason which renders it so. Let me rather turn my eyes to the consoling fact that the use of electrolysis in stricture has come to the front."

WHILE my experience with electrolysis in the treatment of urethral stricture is too infantile to warrant statistics, yet, thus far, my results do warrant me in saying, "so far, so good."

W. E. DERRY, M.D.

DOVER, N. J.

## The Medical Digest.

### THE THERAPEUTIC MERIT OF COMBINED REMEDIES.

IN nearly every case where quinia is indicated, it can be advantageously combined with antikamnia, which thus becomes a valuable adjunct to quinia. Quinia, for example, is a most decided febrifuge, and its action is usually promptly reliable; but when combined with this member of the aromatic series, its action is markedly increased. Some individuals, however, cannot take any of the coal-tar derivatives; consequently the use of antikamnia will be inhibited in such cases; on the other hand, some patients cannot take quinine.

An important benefit to be derived from the addition of antikamnia to quinine is that it removes the sense of fullness of the head, constriction about the forehead and tinnitus aurium—so common when the latter drug is administered alone; the disturbing action of quinia on the auditory nerve is suspended to a great extent, and the usual quinine deafness is absent. The combination of these agents in tablet form is a happy one.

The combination of antikamnia with quinia is valuable in the racking headache, with high fever, attendant upon malarial disorders. It is likewise valuable in cases of periodical attacks of headache of non-defined origin; of the so-called "bilious attacks;" of dengue; in neuralgia of the trigemini; in that of "ovarian catarrh;" and, in short, in nearly every case where quinine would ordinarily be prescribed.

Binz claims specific antiseptic powers for quinia; other writers are in accord with him on this point, and report good results from large doses in septicæmia, pyæmia, puerperal fever, and erysipelas. It is a germ destroyer of the bacilli of influenza (la grippe). A full dose of quinine and antikamnia will promptly relieve many cases of this disease. In the gastric catarrh of drunkards, this combination is valuable. Quinia is a poison to the minute organism—sarcina; and antikamnia exerts a soothing, quieting effect on the nerve filaments. A full dose of antikamnia and quinia will often arrest a commencing pneumonia or pleuritis. This combination is also useful in the typho-malarial fever of the South—particularly for the hyperpyrexia—both quinia and antikamnia, as previously said, being decided fever reducers.

The germicide power of quinia is the explanation of its success in the treatment of malarial disturbances. Thus it is also a prophylactic against the various manifestations of malarial poison, and as such it can be relied on. The cause of malaria as a disease consists of pigmented bodies, which penetrate the interior of the red blood corpuscles—pigmented bodies of various shapes and flagellate organisms—both having amœboid movements—the filaments being in active vibration.

In meningeal troubles, attended by marked acceleration of the heart due to



the rise in the fever temperature, full doses of quinine and antikamnia at intervals of, say, about four hours, will be productive of good. In measles, large doses of the combination at night—say ten grains of each for adults (doses for children in proportion), will relieve the distress of the catarrhal pneumonia, and modify, in great degree, the amount of the exudative products. The periodical neuroses which may be either regular or irregular in their manifestations, but which are dependent on the malarial germ for their origin, are all controllable by the combination of quinine and antikamnia. Examples of such neuroses are asthma, laryngismus stridulus, summer catarrh, etc. Indeed, for the hemicrania and neuralgias of malarial origin, the combination of quinine and antikamnia, just alluded to, may be declared a *specific*.

The dose of quinine may be made smaller than usual when administered with antikamnia. Thus, one or two tablets of two and a half grains each of quinine and antikamnia will prove sufficient for great utility in puerperal mania, in the headaches of advanced age, accompanied with vertigo and despondency.

This combination is capable, by the combined influence of each drug on the nervous system and blood, of restraining all the processes which develop heat, organic changes, and muscular motion; therefore, it is "the one thing needful" in the treatment of the hyperpyrexia of malarial fevers. In the vast majority of cases, when necessary to administer quinine, if antikamnia be added to the prescription, the results will be surprising.

Formerly, the idea prevailed that in order to render the treatment of periodical fevers efficient, the gastro-intestinal tube should be cleaned out by emetics and cathartics. This, however, is a fallacy, as the conditions they are intended to remove depend mainly on the malarial poison, for which the combination of quinine and antikamnia is the specific cure.

In speaking of the treatment of pneumonia by quinine and antikamnia, Prof. Palmer says: "The effects desired, and certainly as a rule produced, are a decided reduction of temperature, a marked diminution in the frequency of the pulse, a decided moisture of the skin or free sweating, a slower and more easy respi-

ration or relief from pain, and the feeling of fullness of the chest, a diminution of the cough and of the tenacious and bloody character of the expectoration; and, in short, not only is there a checking of the fever, but of all evidences—general and local—of the pulmonary engorgement and inflammation."

In Meniere's disease, or "labyrinthine vertigo," this combination has, by persistent use, entirely removed the trouble in many cases. The curative effects of quinine and the coal-tar antipyretics in sunstroke are well known, and have been used recently with great benefit in numerous instances in this country and in India. In hysteria, and even in epilepsy, the combination of quinine and antikamnia is often indicated, and will frequently give the desired results. In whooping cough and hay fever, quinine and antikamnia will prove beneficial.

The tablets of equal parts of quinine and antikamnia spoken of in this article, can be administered by the rectum, with good effect. They should first be dissolved in whiskey, and then water can be added in any quantity needed—always remembering the total quantity of each drug in such enemata—Stephen J. Clark, M. D., in *Va. Med. Monthly*.

**THE EDISON CURRENT FOR CAUTERY PURPOSES.**—In the *New York Medical Journal* for February 4th, Dr. Edward J. Birmingham, Surgeon to the New York Throat and Nose Infirmary, describes a very ingenious apparatus which he has devised for controlling the Edison current so that it can be used direct for galvanocautery operations. The apparatus consists of a *rheostat*, made of coils of iron wire and a handle. The peculiarity of the handle consists of its having solid conductors, and the circuit is therefore always closed. It is under the control of the operator's thumb at all times during the operation, and the current can be cut off from, or allowed to pass to, the knife instantaneously and without producing an arc. The apparatus is simple and inexpensive, and, from the detailed description given, any electrician can construct it. Dr. Birmingham has been using it for two years and a half for all his cautery operations.